

METEOROLOGICAL REPORT, FOR THE YEAR 1885.

[The following report, being of permanent scientific value, is here reprinted from the Government Gazette. Ed.]

1. The report for the year 1885 gives the results of the observations taken at Singapore, Penang, Province Wellesley and Malacca, and embraces the following meteorological elements:—

- I. Atmospheric Pressure.
- II. Temperature of Air.
- III. Temperature of Solar Radiation.
- IV. Temperature of Grass, Nocturnal Radiation.
- V. Humidity.
- VI. Wind, Direction and Velocity.
- VII. Rainfall.

2. Annual abstracts of the observations, taken at the four recording stations are attached, as are also the annual registers of rainfall.

3. The accompanying charts shew the mean annual pressure, temperature, rainfall, and the number of days on which rain fell at Singapore, from 1870 to 1885. These tables are interesting, and gain in importance every year.

4. I regret that some of the registers shew a few unavoidable interruptions, but care will be taken in future that these returns be made as complete as possible.

Atmospheric Pressure.

Stations.	High- est.	Date.	Lowest.	Date.	Range for the year.	Mean for the year.
	Inches.		Inches.		Inches.	Inches.
Singapore, ...	30.038	22nd Jan.	29.708	29th Oct.	.106	29.889
Penang, ...	30.197	7th Jan.	29.712	17th Dec.	.102	29.972
P. Wellesley, ...	29.999	21st Jan.	29.611	10th June	.073	29.833
Malacca, ...	29.968	20th Oct.	29.702	9th June	.073	29.860

5. The highest barometrical pressure (30.197 inches) was recorded in Penang on the 7th January, and the lowest (29.611) at Province Wellesley on the 10th June. These two Settlements also registered the highest and lowest mean, viz., 29.972 and 29.833 inches, respectively.

Temperature of Air.

Stations.	High- est.	Date.	Lowest.	Date.	Range.	Mean for the year.
	°F.		°F.		°F.	°F.
Singapore, ...	92.0	24th May	63.4	10th Feb.	14.9	81.7
Penang, ...	96.5	14th June	70.0	10th Jan.	14.5	82.7
P. Wellesley, ...	98.0	9th Jan.	65.5	28th Feb.	18.9	83.5
Malacca, ...	96.0	18th June	69.0	15th Jan.	14.8	82.3

6. The highest temperature (98.0°F.) was observed at Province Wellesley on the 9th January, and the lowest (63.4°F.) at Singapore on the 10th February, the lowest mean was also recorded at the latter Settlement, but in all, the mean temperature for 1885 is slightly higher than that for 1884.

Temperature of Solar Radiation.

Stations.	Highest.	Date.	Lowest.	Date.	Mean for the year.
	°F.		°F.		°F.
Singapore, ...	161.6	25th Mar.	91.3	9th Aug.	148.7
Penang, ...	159.0	2nd Feb.	90.1	27th June	145.7
Province Wellesley, ...	163.0	5th Jan.	90.0	7th Aug.	140.1
Malacca, ...	175.0	14th Feb.	125.0	16th May	156.1

7. The highest temperature of the sun's rays (175.0°F.) was observed at Malacca on the 14th February, and the lowest (90.0°F.) was recorded on the 7th August at Province Wellesley; the lowest mean, viz., 140.1 was registered at the same station.

Temperature of Grass, Nocturnal Radiation.

Stations.	Highest.	Date.	Lowest.	Date.	Mean for the year.
	° F.		° F.		° F.
Singapore,	74.9	27th July	54.5	10th Feb.	69.1
Penang,		Not observed.			
Province Wellesley,	76.5	12th Aug.	63.5	28th Feb.	70.0
Malacca	74.0	27th May	66.0	2nd Mar.	71.7

8. The highest temperature on grass (76.5°F.) was observed on the 12th August at Province Wellesley, and the lowest (54.5°F.) at Singapore on the 10th February. At this station also was recorded the lowest mean, viz, 69.1°F.

Humidity.

Stations.	Highest.	Date.	Lowest.	Date.	Mean for the year.
	%		%		%
Singapore,	98	13th Feb.	50	15th June	79
Penang,	98	8th Aug.	41	26th Jan.	76
Province Wellesley,	100	10th Aug.	39	8th Feb.	78
Malacca,	100	28th May	36	15th Jan.	84

9. The highest percentage of humidity (100%) was observed at Province Wellesley and Malacca, on the 10th August and 28th May, respectively. At the latter Settlement, also, the lowest percentage was recorded, viz., 36% on the 15th January, and the highest mean percentage, viz., 84%.

Wind, Direction and Velocity.

10. From January to March, the wind blew from the N. E. and occasionally from the N. N. E. and N. In the early part of April, the wind was easterly.

11. The S. W. Monsoon appeared in the latter part of April, and, with but slight variations from S. E., continued steady until October. In November, the winds were variable, sometimes W. and at times W. S. W.

12. December ushered in the N. E. Monsoon with occasional winds from the N. N. W. and N. W.

13. The following table shews a summary of the wind direction at Singapore during the year 1885:—

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
North, ...	5	6	3	3	2	...	...	...	...	...	4	4
N.N.E., ...	3	10	20	5	2	...	...	...	1	1	...	...
N.E., ...	59	36	29	5	...	...	...	...	...	...	...	30
E.N.E., ...	1	12	5	6	2	...	...	...	1	1	...	...
East, ...	...	1	8	12	15	20	6	2	3	4	1	1
E.S.E., ...	...	...	4	4	4	9	3	2	2	...	...	1
S.E., ...	...	...	2	3	9	7	11	8	23	7	1	...
S.S.E., ...	...	...	...	3	3	10	7	6	8	5	1	...
South, ...	...	...	1	...	5	10	7	6	3	4	...	...
S.S.W., ...	...	2	...	2	1	...	1	1	1	5	4	1
S.W., ...	1	...	...	9	21	18	44	48	23	24	5	...
W.S.W., ...	...	1	...	1	1	...	...	1	3	5	11	...
West, ...	...	...	...	...	1	...	1	1	...	1	13	6
W.N.W., ...	...	...	...	1	...	...	3	3	...	2	2	2
N.W., ...	1	...	...	...	...	...	...	...	1	1	7	7
N.N.W., ...	...	1	...	1	2	...	3	1	...	2	4	13
Calm, ...	23	25	21	34	24	16	8	14	20	29	36	28

Singapore.

14. The velocity of the wind was registered during nine months of the year only, owing to the anemometer having gone out of repair; during the other three months no observations were taken. The mean velocity for this period was 113 miles, and the greatest in 24 hours was 263 miles on the 5th March.

Penang and Province Wellesley.

15. During the year 1885, no observations of the direction and velocity of the wind were taken. We hope next year to have this omission rectified.

Malacca.

16. The N. E. wind prevailed from January to April, and again from November to December. During the other months of the year, the wind was generally S. W.

17. The mean velocity of the wind during the twelve

months was 183 miles, and the greatest velocity in any one day was 470 miles.

Rainfall.

18. The total number of registering stations in the Straits during the year 1885 was 29, being 18 over the number in 1884. Eighteen of these, viz., 7 in Singapore, 3 in Penang, 5 in Province Wellesley and 3 in Malacca, supplied complete returns; the remaining 11 furnishing theirs only incompletely. At Singapore, new stations were started during the year at the Botanic Gardens, Neidpath, Chasseriau's Estate and Bukit Timab, but, owing to the absence of the official in charge of the last-named station, the observation had to be discontinued in September.

19. At the beginning of the year, the station at the Leper Asylum, Pulau Jerajah, which hitherto furnished returns for Penang, was placed under the supervision of the Colonial Surgeon, Province Wellesley, and the observations there have since been embodied in the returns of that Settlement. A new station will shortly be opened at Balik Pulau, Penang, which is much required.

20. At Province Wellesley, no new stations were opened during the year, the four registering stations at the District Hospitals and the one at the Leper Island being found to be ample.

21. In Malacca, seven new stations were started in the course of the year 1885, in different situations, and a few more will be opened in 1886. Mr. HERVEY, the Resident Councillor, takes a keen interest on the subject of the rainfall at this Settlement, and I am obliged to him for suggestions as to the best localities for having them.

Singapore.

22. On the whole, the year 1885 was a very dry one, it being, leaving out 1877, among the driest on record. The mean fall for the year was 67.32 inches only, and the number of days on which rain fell, 134.

23. The maximum fall (16.37 inches) occurred in December at the Sepoy Lines, and on the 20th of the same month, at the same station, was recorded the greatest fall in 24 hours, viz., 6.10 inches. The minimum fall in any one

month was that registered at the Water-Works Reservoir, Thompson Road, viz., 0.63 inches.

24. As already noticed by others, it is interesting to study the Singapore tables of rainfall, and to observe how every few years, varying apparently from 8 to 10, we have a very large annual fall of rain, and a smaller fall, though still above the average, about every five years. Such seems, at least, to be the more or less general result, if we look at the records from their very commencement until now.

25. What degree of influence the forest denudation happily now checked), which has been going on here for some years, has had on our rainfall, it is difficult to say, but considering the situation of Singapore island relatively to the two monsoons, and the very few hills we have high enough to affect much the rain-bearing clouds, I do not think it has been very great.

26. That, however, forest desiccation does influence rainfall materially, there can be little doubt. Of this, many proofs now exist, but in further confirmation may be quoted an article which appeared early in this year in an East American paper called the *Southern Bivouac* upon the forest destruction which has been going on recently in that country. The writing is clothed in the tall but quaint and pithy language of a Transatlantic cousin, whose view, though pessimistic, doubtless yet contains much truth. It is headed "Forest Desiccation" and runs thus:—

"If the progress of tree destruction in the Western Alleghanies, should continue at the present rate, the yearly inundations of the Ohio valley will soon assume an appalling aspect, and ere long the scenes of the river suburbs of Louisville and Cincinnati will repeat themselves at Nashville and Chattanooga, while the summers will become hotter and drier. In the Gulf States, the work of desiccation has made alarming advances, brooks and streams shrink from year to year, and warm summers expose the gravel of river beds which fifty years ago could hardly be touched by the keels of heavy laden vessels. East America is drying up; even in the paradise of the blue grass region, the failing of springs has driven many stock-raisers with their herds to the mountains."

Penang.

27. During the first five months of the year, the fall was unusually small, but was compensated however by heavy falls during the last seven months consecutively. The mean for the year is 110.81, as compared with 86.02 in 1884, shewing an increase of 24.79 inches.

28. The greatest fall in 24 hours was recorded on 12th July, viz., 6.93 inches at Government Hill. At this station there was also recorded the greatest fall in any one month, viz., 28.89 inches in September. The smallest fall on record is 0.27 inches, which was in January, and at the Central Prison.

Province Wellesley.

29. The rainfall at this Settlement during 1885 was heavy, 106.29 inches was the mean, against 80.60 in the previous year. The greatest fall in 24 hours was 5.60 inches at Bertam on 14th October. The driest month was January. No rain was registered at Butterworth and Pulau Jerajah, and the mean fall recorded at the other stations for the month was only 1.62 inches. October seems to have been the wettest month, the record shewing 21.03 inches.

Malacca.

30. The mean fall registered at the three stations where the returns were complete was 67.71 inches, being 10 inches less than that for 1884. The driest month was February, when the mean fall was 0.75 inches only. The maximum fall was in October; 14.32 inches of rain fell at Kandang.

31. The greatest fall in 24 hours was 4.29 inches on the 15th October at the same station.

32. The following brief notes on the general state of the weather in the Straits will be found interesting.

33. The month of January was dry, more so in Province Wellesley. In Singapore, although the days were hot and dry, the nights were cool and refreshing. Those in January were the coldest on record. From the 9th to the 14th in particular, the minimum temperature fell from 69.9°F. to 63.9°F., with a corresponding fall of the grass radiation thermometer, the lowest recorded on the latter instrument being 59.9°F. on the 14th January. This low temperature was also observed on reliable independent testimony at Johor,

and at the time formed a subject of common talk among the residents. In February, there was a small amount of rain at Singapore, but the days and nights were cool. The minimum temperature at night was low, 63.4 being registered on the 10th. In Penang, Province Wellesley and Malacca, it was a very dry month. In Singapore, March was remarkable for a long drought. No rain fell in the last sixteen days of the month, and the total fall registered was only 1.17 inches at Kampong Kerbau. In Penang, it was very dry, and so also in the other Settlements. There was a fair amount of rainfall in all the Settlements during the months of April and May; June and July were wet months throughout, August was somewhat dry in Singapore, and in Malacca, principally at Kandang, Kessang and Nyalas, but in Penang and Province Wellesley, rain was abundant. September was a dry month in certain parts of Singapore, but in the districts of Teluk Blangah and Sepoy Lines, rain was heavy, so also in Province Wellesley and Malacca. October was unusually dry in Singapore, but abundant rain fell in other Settlements. November and December were wet months throughout the Straits, there being abundant rain. On the night of the 12th and one or two nights following, an unusual number of meteors were observed. This phenomenon was also seen in other parts of the globe.

34. I take this opportunity of tendering my thanks, in connection with the registration of rainfall at Singapore, to MESSRS. GEIGER, KNIGHT, McRITCHIE, ST. VINCENT B. DOWN, and CANTLEY, for their valuable contributions of monthly returns of rainfall registered at the P. & O. Co.'s Dépôt, Killiney Estate, Water-Works Reservoir, Thompson Road, Neidpath and the Botanic Gardens, respectively.

T. IRVINE ROWELL, M.D.,

Principal Civil Medical Officer, S. S.

Singapore, 30th January, 1886.

1885.

MONTHS.	C. U. Y.	Mean.	Rainfall during the month	PRO- PORTION OF CLOUD 0 TO 10.		
				9 hours.	15 hours.	21 hours.
	%	Ins.				
Jan.	.077	1.99	3	4	2	
Feb.	.284	6.29	6	6	4	
March	.777	1.17	4	5	2	
April.	.080	5.40	5	6	2	
May	.080	7.22	5	6	4	
June	.730	10.11	5	5	5	
July	.576	3.82	5	5	3	
Aug.	.376	2.34	4	4	2	
Sept.	.676	2.31	5	6	4	
Oct.	.976	3.93	4	4	2	
Nov.	.383	10.42	5	6	5	
Dec.	.435	15.48	6	6	5	
Mean.	.879	Total 71.01	4	5	3	

Annual Abstract of Meteorological Observations taken at the Kampong Kerlat Observatory, Singapore, for the year 1885.

MONTHS.	BAROMETRICAL READINGS CORRECTED AND REDUCED TO 32° F.				TEMPERATURE OF AIR.							TEMPERATURE OF RADIATION.		WIND.	TEMPERATURE OF EVAPORATION.				COMPUTED VAPOUR TENSION.			RELATIVE HUMIDITY.				Rainfall during the month	PROPORTION OF CLOUD 0 TO 10.				
	9 hours.	15 hours.	21 hours.	Mean.	9 hours.	15 hours.	21 hours.	Mean.	Maximum.	Minimum.	Range.	Sun.	Grass.		Prevailing direction.	Mean Velocity.	9 hours.	15 hours.	21 hours.	Mean.	9 hours.	15 hours.	21 hours.	Mean.	9 hours.		15 hours.	21 hours.	Mean.	9 hours.	15 hours.
	Ins.	Ins.	Ins.	Ins.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.		Miles.	°F.	°F.	°F.	°F.	Ins.	Ins.	Ins.	Ins.	%	%	%	%	Ins.			
Jan. ...	30.005	29.894	29.979	29.959	80.4	84.2	75.4	80.0	86.0	69.4	16.6	118.0	65.0	N.E.	89	74.8	75.3	73.1	74.4	.791	.759	.789	.779	77	68	89	77	1.99	3	4	2
Feb. ...	29.933	.826	.906	.888	79.4	82.7	75.5	79.2	86.2	69.9	16.3	149.3	63.1	N.E.	...	75.9	76.9	73.8	75.5	.844	.846	.815	.835	83	76	92	81	6.29	6	6	4
March..	.954	.846	.929	.909	82.3	85.2	76.9	81.5	87.7	70.9	16.8	153.2	63.8	N.N.E.	...	76.4	76.5	74.3	75.8	.830	.849	.808	.821	76	67	87	77	1.17	4	5	2
April...	.897	.787	.865	.849	81.3	84.6	78.3	82.4	88.5	72.8	15.7	152.1	70.2	N.N.E. & N.N.W.	166	78.1	77.9	76.4	77.5	.879	.872	.879	.877	75	76	90	80	5.40	5	6	2
May ...	.899	.805	.877	.861	84.7	84.5	78.9	82.7	88.2	73.5	14.7	150.7	71.4	S.W.	144	78.8	78.1	76.7	77.9	.904	.879	.888	.887	73	75	90	80	7.22	5	6	4
June ...	.895	.797	.874	.855	83.8	83.5	79.6	82.3	86.8	74.3	12.5	145.6	71.7	S.W.	155	78.5	77.9	76.6	77.7	.994	.873	.873	.883	78	75	87	80	10.11	5	5	5
July ...	.924	.829	.897	.883	83.9	85.3	79.9	83.0	87.3	73.9	13.4	145.7	70.7	S.W.	158	77.9	77.6	76.5	77.3	.831	.848	.868	.866	76	68	85	76	3.82	5	5	3
Aug. ...	.913	.810	.884	.869	83.8	85.2	78.7	82.9	87.6	72.2	15.4	144.4	69.2	S.W.	163	77.4	76.9	75.9	77.4	.884	.832	.845	.854	76	68	83	76	2.34	4	4	2
Sept. ...	.946	.843	.911	.900	83.9	84.1	79.1	82.3	88.0	72.8	15.2	150.3	69.7	S.W. & S.E.	...	78.0	77.2	75.8	77.0	.884	.842	.847	.858	76	72	86	76	2.81	5	6	4
Oct. ...	.963	.838	.921	.907	84.8	85.5	78.7	83.0	88.6	72.9	15.7	153.2	69.3	W.S.W. & W.	40	78.3	77.7	76.2	77.4	.884	.884	.876	.888	74	69	89	76	3.93	4	4	2
Nov. ...	.954	.835	.933	.907	82.9	83.8	77.5	81.4	87.1	72.7	14.4	149.4	70.2	S.W. & N.N.W.	44	77.8	77.8	76.0	77.2	.884	.873	.883	.880	79	76	93	88	10.42	5	6	5
Dec. ...	.935	.825	.906	.889	80.9	82.0	76.6	79.8	85.1	72.2	12.9	142.6	69.6	N.E.	51	76.8	77.1	75.2	76.4	.859	.882	.864	.863	82	80	94	85	15.48	6	6	5
Mean...	29.934	29.828	29.906	29.889	82.9	84.2	77.9	81.7	87.2	72.3	14.9	148.7	69.1	...	113	77.4	77.2	75.5	76.7	.869	.847	.853	.856	77	72	88	79	Total 71.01	4	5	3



PRO-
PORTION
OF
CLOUD.
0 TO 1

9 hours.	15 hours.	21 hours.
1	4	5
4	5	4
5	6	4
5	6	3
6	7	6
7	7	7
7	7	7
6	7	6
7	8	7
6	7	7
6	7	6
5	6	5
5	6	5

Annual Abstract of Meteorological Observations, Penang, for the year 1885.

MONTHS.	BAROMETRICAL READINGS CORRECTED AND REDUCED TO 32° F.				TEMPERATURE OF AIR.						TEMPERATURE OF RADIATION.		WIND.		TEMPERATURE OF EVAPORATION.				COMPUTED VAPOUR TENSION.				RELATIVE HUMIDITY.			Rainfall during the month.	PROPORTION OF CLOUD, 0 TO 1.			
	9 hours.	15 hours.	21 hours.	Mean.	9 hours.	15 hours.	21 hours.	Mean.	Maximum.	Minimum.	Range.	Sun.	Grass.	Prevailing Direction.	Mean Velocity.	9 hours.	15 hours.	21 hours.	Mean.	9 hours.	15 hours.	21 hours.	Mean.	9 hours.	15 hours.		21 hours.	Mean.	9 hours.	15 hours.
Jan. ...	30.129	30.068	30.059	30.095	81.2	89.1	77.8	82.8	91.0	73.0	18.0	152.0	Not observed.	Not observed.	Not observed.	73.3	77.0	74.3	74.9	718	771	805	764.6	668	339	0.27	1	4	5	
Feb. ...	.059	29.953	.056	.022	81.1	89.4	81.5	84.0	92.1	74.0	18.1	151.0				73.6	77.5	75.3	75.5	727	781	799	769.68	577	4.66		1.14	1	5	4
March..	.058	.938	.035	.016	82.9	90.1	82.2	85.1	92.5	75.4	17.1	119.7				75.9	79.0	77.4	77.4	798	837	874	836.70	597	9.69		1.92	5	6	4
April...	.032	.926	.026	29.994	84.2	90.0	82.1	85.4	92.1	76.7	15.4	147.0				78.4	79.2	77.6	78.4	893	856	885	876.76	608	0.72		2.72	5	6	3
May ...	.023	.926	.021	.990	84.2	86.7	80.6	83.8	89.8	76.2	13.6	117.2				78.5	79.9	77.4	78.3	893	881	894	889.76	708	6.77		6.87	6	7	6
June ...	29.995	.912	29.989	.965	83.1	85.7	79.7	82.8	88.9	76.2	12.7	110.9				77.5	78.1	76.7	77.5	869	868	876	871.77	718	7.78		9.47	7	7	7
July ...	30.031	.947	30.013	.997	81.6	85.0	79.6	82.7	88.0	74.9	13.1	141.9				76.5	77.7	76.3	76.8	839	849	863	850.78	708	5.77		11.11	7	7	7
Aug. ...	.022	.936	.012	.990	82.0	84.0	78.4	81.4	87.5	74.4	13.1	110.6				77.2	77.5	75.6	76.7	865	854	844	854.80	748	7.80		14.29	6	7	6
Sept. ...	.002	.898	29.997	.965	81.8	83.8	78.2	81.2	86.9	74.7	12.2	143.9				77.5	77.6	76.0	77.0	882	860	863	868.81	749	0.81		21.67	7	8	7
Oct. ...	29.941	.805	.920	.889	80.7	83.9	77.9	80.8	87.2	74.4	12.8	144.9				76.1	78.1	76.2	77.0	867	878	873	872.83	769	1.83		21.14	6	7	7
Nov. ...	.939	.814	.916	.889	80.9	84.0	78.3	81.0	87.6	74.6	13.0	144.0				77.1	78.2	76.2	77.1	880	882	869	877.83	769	0.83		7.95	6	7	6
Dec. ...	.904	.785	.894	.860	80.3	85.7	78.9	81.4	88.4	74.2	14.2	145.6				75.8	77.3	76.0	76.3	829	821	852	834.8	678	6.77		8.30	5	6	5
Mean...	30.011	29.909	29.994	29.972	82.0	86.4	79.6	82.7	89.3	74.8	14.5	145.7				76.5	78.0	76.2	76.9	833	844	858	846.76	678	4.76	Total	107.15	5	6	5



	Rainfall during the month.	PRO- PORTION OF CLOUD TO 10.		
		9 hours.	15 hours.	21 hours.
Ja	1.16	1	1	2
Fe	3.14	1	2	2
Ma	1.12	3	3	4
Ap	2.67	2	5	6
Ma	7.40	5	7	9
Ju	10.24	4	6	6
Ju	9.20	3	4	5
Aug	9.31	3	4	5
Se	13.96	4	7	9
Oct	18.80	5	7	8
Nov	10.79	5	8	7
Dec	9.20	5	7	6
<hr/>				
Mc	Total 96.99	3	5	6

Annual Abstract of Meteorological Observations, Province Wellesley, for the year 1885.

MONTHS.	BAROMETRICAL READINGS CORRECTED AND REDUCED TO 32° FAHR.				TEMPERATURE OF AIR.						TEMPERATURE OF RADIATION.		WIND.		TEMPERATURE OF EVAPORATION.				COMPUTED VAPOUR TENSION.				RELATIVE HUMIDITY.				Rainfall during the month.	PROPORTION OF CLOUD (TO 10).		
	9 hours.	15 hours.	21 hours.	Mean.	9 hours.	15 hours.	21 hours.	Mean.	Maximum.	Minimum.	Range.	Sun.	Grass.	Prevailing Direction.	Mean Velocity.	9 hours.	15 hours.	21 hours.	Mean.	9 hours.	15 hours.	21 hours.	Mean.	9 hours.	15 hours.	21 hours.		Mean.	9 hours.	15 hours.
Jan ...	29.951	29.837	29.915	29.901	85.0	89.0	77.4	83.9	94.2	69.6	24.6	154.6	68.0	Not observed.	Not observed.	76.6	79.0	74.6	76.7	.807	.852	.823	.827	66.61	87.71	1.16	1	1	2	
Feb. ...	.883	.783	.856	.839	85.7	89.0	77.6	84.1	92.8	70.2	22.5	145.9	69.0			77.0	78.7	75.2	76.9	.814	.841	.849	.832	63.60	89.71	3.14	1	2	2
March...	.859	.777	.846	.827	86.0	89.0	78.0	84.3	93.2	72.1	21.1	145.4	68.7			78.0	80.0	76.0	78.0	.892	.889	.882	.857	70.65	91.75	1.12	3	3	4	
April...	.823	.742	.783	.782	87.9	89.6	80.7	86.4	93.7	74.4	19.3	143.0	69.4			80.9	81.8	77.7	80.1	.930	.975	.904	.944	73.71	87.70	2.67	2	5	6	
May ...	.854	.826	.845	.841	86.1	88.0	79.2	84.4	91.5	73.5	18.0	142.3	71.2			80.2	80.9	77.2	79.4	.951	.948	.902	.925	78.72	91.79	7.10	5	7	9
June ...	.849	.791	.829	.823	83.7	83.1	79.2	83.0	90.5	72.2	18.3	133.7	69.3			79.1	80.4	77.4	78.9	.932	.951	.909	.922	81.78	93.83	10.24	4	6	6
July ...	.797	.751	.793	.779	84.2	86.3	74.6	82.9	90.5	...	...	146.9	73.1			78.6	79.3	76.0	77.9	.904	.912	.874	.897	76.72	91.79	9.20	3	4	5
Aug. ...	.852	.799	.842	.823	84.9	85.1	78.4	82.8	89.6	73.8	15.8	137.5	72.9			78.8	79.4	76.2	78.1	.908	.933	.885	.911	75.77	91.81	9.31	3	4	5
Sept. ...	.872	.801	.867	.850	84.3	84.0	77.5	81.9	89.1	73.1	16.0	126.4	70.4			78.8	79.1	75.6	77.8	.916	.930	.862	.903	77.80	91.82	13.96	4	7	9
Oct. ...	.888	.799	.852	.846	84.5	84.3	77.6	82.1	89.8	73.3	16.5	133.8	69.7			79.7	80.1	76.5	78.7	.974	.953	.896	.935	80.82	94.85	18.80	5	7	8
Nov. ...	...	...	...	...	...	...	...	...	90.1	73.6	17.5	134.4	69.5			80.0	74.9	76.5	78.6	.956	.931	.891	.928	81.33	92.84	10.79	5	8	7
Dec. ...	...	...	...	...	...	...	...	...	91.7	72.5	17.2	135.3	69.5			79.6	79.8	76.4	78.6	.937	.946	.891	.917	77.77	92.81	9.20	5	7	6
Mean...	29.862	29.789	29.842	29.833	85.2	87.0	78.0	83.5	91.4	72.5	18.9	141.1	70.0			78.1	79.8	76.2	78.3	.912	.925	.880	.899	75.73	91.78	Total 96.99	3	5	6	

PRO-
P'TION
OF
CLOUD
0 TO 10.

	9 hours.	15 hours.	21 hours.
5	3	4	1
9	5	5	2
5	4	2	2
5	3	4	5
9	4	5	5
6	4	5	7
10	4	3	3
8	3	3	4
8	3	2	5
23	3	2	6
32	4	3	4
33	3	3	5
41	3	3	4
03			

Annual Abstract of Meteorological Observations, Malacca, for the year 1885.

MONTHS.	BAROMETRICAL READINGS REDUCED AND CORRECTED TO 32° FAHR.				TEMPERATURE OF AIR.						TEMPERATURE OF RADIATION.		WIND.		TEMPERATURE OF EVAPORATION.				COMPUTED VAPOUR TENSION.				RELATIVE HUMIDITY.			Rainfall during the month.	PROPORTION OF CLOUD TO 10.				
	9 hours.	15 hours.	21 hours.	Mean.	9 hours.	15 hours.	21 hours.	Mean.	Maximum.	Minimum.	Range.	un.	Grass.	Prevailing Direction.	Mean Velocity.	9 hours.	15 hours.	21 hours.	Mean.	9 hours.	15 hours.	21 hours.	Mean.	9 hours.	15 hours.		21 hours.	Mean.	9 hours.	15 hours.	21 hours.
Jan. ...	29.905	29.862	29.912	29.893	81.4	86.9	77.2	81.8	90.0	72.0	18.0	159.7	69.4	N.E.	24.8	76.2	78.3	71.8	75.4	.838	1.869	.843	.850	.75	.67	.80	.74	1.25	3	4	1
Feb. ...	.929	.812	.888	.876	81.8	86.8	77.7	82.1	91.7	72.6	19.1	165.9	...	N.E.	21.4	76.3	78.5	75.3	76.7	.793	.855	.883	.845	.76	.73	.89	.79	0.79	5	5	2
March...	.857	.841	.877	.858	84.0	88.2	79.5	83.9	93.2	73.3	19.9	167.5	68.2	N.E.	26.8	78.4	80.6	76.4	78.4	.892	.942	.870	.901	.75	.70	.80	.75	0.55	4	2	2
April ..	.886	.762	.805	.837	85.2	86.1	80.0	83.7	90.0	74.1	15.9	157.4	71.6	N.E.	12.7	80.2	81.2	78.3	79.9	.906	.991	.919	.968	.80	.79	.92	.83	3.45	3	4	5
May ...	.892	.797	.863	.850	82.8	85.2	79.2	82.4	87.8	74.2	13.6	147.3	72.2	S.W.	11.4	79.9	81.4	77.7	79.7	.982	1.010	.947	.979	.87	.79	.94	.80	8.99	4	5	5
June ...	.867	.774	.860	.833	81.6	84.8	79.7	82.0	87.2	74.2	13.0	152.0	72.2	S.W.	17.9	79.5	81.5	78.5	79.8	.984	1.032	.959	.991	.90	.86	.95	.90	8.66	4	5	7
July ...	.887	.816	.859	.854	82.3	84.0	82.1	82.8	87.5	74.5	13.0	150.4	72.2	S.W.	17.4	79.7	81.3	78.0	79.6	.984	1.014	.949	.982	.88	.81	.95	.88	5.20	4	3	3
Aug. ...	.878	.805	.864	.819	82.2	85.5	78.9	82.2	87.7	74.0	13.7	151.7	71.3	S.W.	15.9	79.4	80.8	77.8	79.3	.970	.993	.937	.966	.87	.80	.91	.87	5.68	3	3	4
Sept. ...	.888	.826	.885	.866	82.5	85.9	79.2	82.5	87.3	74.7	12.6	157.1	72.2	S.W.	16.4	80.0	81.4	78.2	79.8	.995	1.018	.957	.988	.89	.81	.95	.88	12.28	3	2	5
Oct. ...	.895	.822	.895	.870	81.6	84.8	79.2	81.8	87.4	74.6	12.8	151.9	74.6	S.W.	16.3	79.2	80.8	78.0	79.5	.981	.993	.955	.977	.90	.83	.95	.89	9.23	3	2	6
Nov. ...	.896	.836	.892	.874	82.2	85.4	79.0	82.2	87.4	74.8	12.6	153.0	72.2	N.E.	18.6	79.6	80.0	78.0	79.5	.978	1.014	.953	.932	.88	.81	.96	.88	6.52	4	3	4
Dec. ...	.887	.838	.885	.870	81.2	83.2	77.9	80.8	88.2	74.7	13.5	150.9	73.1	N.E.	19.3	79.0	79.9	78.6	75.6	.964	.980	.926	.956	.89	.86	.96	.90	8.63	3	3	5
Mean ...	29.888	29.815	29.878	29.860	82.4	85.6	79.1	82.3	88.7	73.9	14.8	156.1	71.7		18.3	78.9	80.4	77.0	78.8	.944	.976	.926	.948	.84	.78	.91	.84	Total 71.03	3	3	4



Greatest Rainfall in 24 hours.	
s.	Ins.
0.42	0.24
1.93	1.29
1.95	1.61
5.04	1.50
7.33	1.63
0.17	2.80
6.30	6.93
8.61	5.06
3.89	5.15
7.02	5.22
2.25	2.10
8.44	2.45
3.41	...

Annual Abstract of Rainfall as observed at Singapore and Penang, during the year 1885.

Months.	SINGAPORE.												PENANG.			
	P. & O. Co.'s Wharf.	General Hospital.	Kandang Kerbau Hospital.	Panper Hospital, Serangoon Road.	Water Works Reservoir, Thompson Road.	Killiney Estate, Tanglin.	Quarantine Station St. John's Island.	Botanic Gardens.	Neidpath.	Bakit Timah.	Chasserian Estate.	Greatest Rainfall in 24 hours.	Fort Cornwallis.	Central Prison.	Government Hill.	Greatest Rainfall in 24 hours.
	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
January,	1.82	1.51	1.99	1.84	0.82	1.71	1.68	Not registered.	Not registered.	Not registered.	Not registered.	0.85	0.34	0.27	0.42	0.24
February,	6.09	6.20	6.29	6.36	4.85	5.37	3.61	Not registered.	Not registered.	Not registered.	Not registered.	1.57	1.59	1.44	1.93	1.29
March,	2.06	1.35	1.17	0.72	0.63	1.65	2.29	Not registered.	Not registered.	Not registered.	Not registered.	1.25	0.93	1.92	1.95	1.61
April,	2.05	3.32	5.40	3.10	5.39	4.99	1.92	5.03	Not registered.	Not registered.	Not registered.	2.12	2.55	2.72	5.04	1.59
May,	4.73	5.68	7.22	6.14	5.47	7.92	4.76	6.81	7.10	7.20	Not registered.	2.23	5.51	6.87	7.33	1.63
June,	7.41	9.76	10.11	8.35	10.14	9.94	7.63	11.41	10.25	8.98	Not registered.	2.45	10.39	9.47	10.17	2.89
July,	5.76	5.81	3.82	4.25	3.83	4.22	5.26	3.72	2.91	4.97	Not registered.	3.01	9.29	11.11	16.39	6.93
August,	3.05	3.38	2.34	3.34	3.07	1.74	4.32	2.71	2.60	3.24	3.54	1.80	10.71	14.29	13.61	5.06
September,	6.59	7.40	2.81	1.76	3.50	4.15	5.57	3.75	4.03	Not registered.	3.87	2.30	14.21	21.67	23.89	5.15
October,	2.32	6.68	3.96	4.19	3.60	2.80	3.44	1.88	3.48	Not registered.	4.63	1.85	18.07	21.14	27.02	5.22
November,	8.59	13.09	10.42	11.95	9.62	9.23	6.00	10.75	13.26	Not registered.	12.84	3.63	8.84	7.95	12.25	2.10
December,	14.04	16.37	15.48	14.10	10.87	13.71	13.43	12.23	13.40	Not registered.	13.85	6.10	4.62	8.30	8.44	2.45
TOTAL,	64.51	80.55	71.01	66.10	61.75	67.43	59.91	58.30	57.03	24.39	33.73	...	86.87	107.15	133.41	...
Mean,	67.32												110.81			